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ABSTRACT

Although field studies in human geography have some advantages over restricted classroom and laboratory studies, special methodological and ethical concerns arise. For example, field studies are able to take into account the complexity of events in natural settings as opposed to the controlled setting of a laboratory, particularly when subjects are required to solve spatial problems. Research concerns, however, involve limitations on the use of instrumentation and, more critically, population sampling. Because it is virtually impossible to control for age, sex, or other demographic characteristics, a researcher may not be able to guarantee study replicability. In addition, when the researcher is working in a small community, respondents continue to be in contact with the researcher and are likely to know one another. Although a good working relationship can be established and respondents' answers to questions can be cross-checked with peers, both parties can become uncomfortable with questions and responses. Because respondents can be adversely affected by public and self-disclosures of traits and competencies they perceive to be negative, publication of the study can be a sensitive issue, even when anonymity is assumed. Researchers, then, need to balance the benefit of the research with the potential psychological harm to the participant. (KC)

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PROBLEMS IN THE STUDY OF SPATIAL BEHAVIOR: FIELD METHODS & ETHICS*

by

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Paper presented at the Annual Meeting of the Association of American Geographers (Denver, CO, April 24-27, 1983).

PROBLEMS IN THE STUDY OF SPATIAL BEHAVIOR: FIELD METHODS & ETHICS*

by Joseph Sonnenfeld, Texas A&M University

At least one psychologist who has written recently on ethical problems in psychology (Schuler, 1982) has suggested as one of the justications for field research, that it is less risky, less harmful, less deceptive, and less manipulative than laboratory research; but, he added, this is at the expense of methodological weakness: field methods either tend to lack in objectivity or are otherwise unsuited for permitting conclusions about cause-effect relationships. In other words, while the non-manipulative character of field study is its strength from an ethical standpoint, it is a weakness methodologically, primarily because of the implied loss of experimental control, including the greater probability of bias in selection of subjects and in subjects' responses under the more complex stimulus condition of the field situation (Schuler, 1982).

My position is that there are methodological consolations in field research in behavioral geography, though there obviously are also problems. Similarly, there are ethical problems that get raised in the field that are less relevant an issue in the laboratory.

This paper deals with some methodological concerns which developed during a recent field study of wayfinding that I was involved in, relevant both to the issue of research design and research ethics.

First, it may not be obvious why one gets involved in field research when one's concern is with spatial skills of a kind normally identified through paper and pencil tests in classroom or laboratory settings; at least, that is how

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psychologists and educators concerned with spatial skills do their testing.[1] Not surprisingly, such tests and testing rarely do justice to the complexity of events in the natural settings in which people normally operate. Not only are such factors as temperature, humidity, cloud cover, and other daily and seasonal variables likely to affect the visibility of critical spatial cues, which are important in a field context, but equally critical are a variety of contextual factors, including noise and visual field elements which, under normal environmental conditions, produce a different system of needs: that is, which are differently demanding of a need to search, identify, persist (in search), resist (competing stimuli), etc.

Field study of spatial skills also differs from that of laboratory study in terms of scale differences. Being in amongst the elements of a field setting is different from choosing among setting elements in the laboratory, not to mention also the effects of distance and angle of perspective; similarly, the difference between whole body sensory integration in wayfinding activity, vs. the hand-eye integration which is all that most laboratory tests of spatial skill require.

The strategies used for solving spatial problems can also be quite different. For example, the specific field elements which wayfinders respond to in real life settings may elicit recollections of prior associations of a kind which are less likely to be elicited by the more restricted visual stimuli used in laboratory testing. Implied is an integrated system of spatial clues and of spatial sensitivity and memory that one can utilize to sense the appropriateness of a given path for getting to some ultimate place (see Pribram, p. 162, re "associative recall").

It is for this reason -- the difference between the field and laboratory setting for the study of spatial skills -- that I could find little correlation between respondents' performance on paper and pencil tests of spatial skill and

level of competence they displayed in normal wayfinding activities when engaged in activities demanding of spatial skill in the complex wayfinding environment of southeast Alaska.[2]

But, if these are the advantages or payoffs of such field study, there are also problems. For example, there are obvious limitations on the use of instrumentation. Most bothersome is the fact that laboratory methods of a type that I have experimented with,[3] involving electroencephalographic measurement for identifying the cerebral correlates of spatial performance, are almost impossible to apply in field situations, not to mention also the problems of convincing volunteers that all the wires and electrodes attached to their scalp are really quite harmless. I had to conclude relatively early in the study that EEG needs are really less critical than the need for observing spatial behavior under normal operating conditions, which one simply can't do while the respondent is encumbered with intricate equipment.

The issue of population sampling is more critical. Laboratory study generally permits one the luxury of sample homogeneity in such as age, sex, and any other demographic characteristics that one may wish to select for. By contrast, it is almost impossible to exert equivalent control in a field study dependent on a limited volunteer population. For this reason, one may not be able to guarantee study replicability except with the same population, and even with the same population, environmental activity variables may act to alter both responses and performance.

Working with a normal population in a normal (meaning non-academic) community raises additional questions of sampling procedure. The investigator, as one option, can ask a randomly selected sample population to answer a set of questions relevant to the issue of wayfinding, and also attempt to probe into peripheral issues, if respondents permit the investigator to so probe.

An alternate option is to attempt to develop closer personal relationships with a community of potential respondents en route to identifying those who are willing to permit the depth of probing desired. In this latter case, what one ends up with is a variant of the ethnographer's informant system, which is neither random nor necessarily large enough for the statistical analysis of subpopulation data of a kind which one likes to have for community studies.

In effect, random population sampling and consistent interview procedures may be able to yield statistically reliable data, but this may be at the expense of a more complete understanding of the behaviors at issue. In the case of my study,[4] the research dealt with wayfinding and related styles of spatial behavior, which are rarely simple in nature; it also dealt with the sources of wayfinding behavior, which are also likely to be rather complex in nature, and which may require probing of early childhood experiences in home and school and local community environments. Yet the problem in a more intimate type of study is in knowing how far to probe, and how many respondents to sample in order to be sure that the patterns one finds are, in fact, pervasive patterns. For traditional communities, a small population of 5-10 respondents may be adequate, given consistencies of cultural background and experience. But for the mixed contemporary society of the kind which I have worked with in Alaska, I felt that had I the time, I could probably have doubled the number of my fifty respondents and still not have depleted the hoard of insight and experience that my study community had to contribute.

There is still a different kind of problem which can arise in working with respondents in the field; this relates to the nature of the relationship that develops and may be needed for successfully carrying out an in-depth field study. If the personal questions I was asking could have been asked of fellow airline passengers during a cross-country flight, there would

probably have been little or no difficulty in respondent-interviewer relationships, nor would issues of privacy and confidentiality likely be raised. As a rule, people like to talk, and most talkers like a good listener. A skilled interviewer can easily manipulate a conversation to obtain the information desired. Once the flight is over, there is a parting, and neither ever sees the other again.

Unhappily, such is not the case when one studies a population in its normal setting, in particular in a small community where respondents continue to be in contact with the investigator, and in fact where the respondents are also likely to know each other. The kinds of questions I was asking were not overly personal; for example, they related to early life experiences, and included questions about school performance and, in particular, about problems with school subjects that might have provided clues as to the sources of spatial abilities and disabilities uncovered during testing and interview sessions. Some could reasonably consider such questions to be too confidential to be divulging to strangers, especially when such self-disclosures were not especially flattering, but among my fifty respondents, only one balked at answering these questions, which I attribute either to a reasonably personable relationship with respondents, or to my relationship with others whom my respondents respected. In fact, having access to peers of respondents was also useful for verifying respondents' answers to questions, as well as for getting evaluations of real world skills of respondents, which could be related to test performance. This kind of cross-checking is possible only through people who know other people well enough to so evaluate them and who are willing to communicate such evaluations to third parties (the investigator).

In other words, I was able to develop a good working relationship with enough people to be able to carry out a reasonably successful study of the

ADAPTED FROM H. SCHULER (1982).

THE EXPERIMENT AS A SOCIAL CONTRACT:

COSTS AND BENEFITS OF THE EXPERIMENT

BENEFITS		COSTS	
SUBJECTS	EXPERIMENTER	SUBJECTS	EXPERIMENTER
SATISFACTION OF INTEREST OR CURIOSITY	SATISFACTION OF SCIENTIFIC INTEREST	TIME	TIME
INCREASED SCIENTIFIC UNDERSTANDING	SCIENTIFIC SUCCESS	FORGOING OTHER ACTIVITIES	FORGOING OTHER ACTIVITIES
FEELING OF HAVING CONTRIBUTED TO SCIENCE	POWER	INVESTMENT OF EFFORT	INVESTMENT OF EFFORT
SELF-PRESENTATION	RECOGNITION	SUBMISSION (RELINQUISHING CONTROL)	VARIOUS RISKS
RECOGNITION	CAREER BENEFITS	PSYCHOLOGICAL STRESS	
INCREASED STATUS	SOCIAL CONTACT	PHYSICAL STRESS	
SOCIAL CONTACT		ANXIETY	
MATERIAL REWARDS		EMBARRASSMENT	
STIMULATION		LOSS OF TRUST	
SELF-INSIGHT		DISAPPOINTMENT	
		IMPAIRED SELF-ESTEEM	

nature and correlates of spatial skills; and this in an environment involving activities which required such skills for economic and personal well-being. I could justify the study, and the questions I was asking as all relevant to the issue of spatial skill. And yet it was also apparent that I and my respondents, at times, were uncomfortable with the questions asked; and at times one or the other or both were equally uncomfortable with the answers given. At some point, the sensitive investigator begins to ask himself some uneasy questions. What kind of research really justifies such intrusion into others' privacy? What justification is there for imposing tests of skill on those who volunteer their time and, on occasion, even material resources to support the study; in particular, what justification is there when the outcome appears of little relevance to those being studied, compared to the rewards accruing to the investigator? (Figure 1) Clearly, respondents risk negative disclosure, for not only are they curious about how well they have performed, but they are curious also about how well they have performed compared to others they know. There is additional risk of embarrassment when publication occurs, for even when anonymity is assured, they and their performance are exposed to the world-at-large, even if that world is only that of the community-at-large (meaning if they ask to see a copy of the final study, they are likely to be able to recongize themselves without too much difficulty, if not as individuals, at least as members of the study group).

The conflict for this kind of research is in the need for the investigator to develop a sense of closeness with respondents for the purpose of being able to get them involved in his study, knowing that the study may intrude subsequently -- and negatively -- on the relationship that develops between them. In the airplane scenario, the respondent disappears and is never seen or heard from again; in the case of a longterm community study, those whom one studies

remain and continue to interact both with the investigator and other respondents, and all may or may not be forgot.

There is, then, a question of benefit, and of potential harm that one has to consider in such study. This is an issue that cross-cultural psychologists, among others, have to contend with; they appear -- formally, at least -- to have resolved it by confirming -- with apparent unanimity -- that the researcher should assume an obligation to consider as primary the welfare of those whom he or she studies.[5] How do behavioral geographers handle such an issue? The field-laboratory distinction seems critical here. What are reasonable justifications for behavioral research of a kind that involves intrusions into community -- in terms of benefit to the subject, or to his family, or to the community, or to the environment? And how necessary, in fact, is such a criterion of utility or benefit as precondition for engaging in behavioral research? No doubt, one could justify one's research in any of a variety of ways, such as potentially benefit some segment of society, or some aspect of environment, if not directly those individuals who are to be involved in the study. But what of this issue of potential for harm to the respondent? How does one gauge this? Most studies which probe environmental attitudes, landscape preferences and related values imply a kind of self-disclosure which itself would appear not to be harmful. But what of the disclosure of unpopular personal biases concerning environment or community? or concerning individuals in the community? What of the inadvertent disclosure of family ghosts, of broken families and related personal facts? An important part of my study required respondents to submit to tests designed to get at level of competence; yet it was clear that some would fail, and even in the absence of public presentation of results, the individual was bound to become aware of incompetencies he could otherwise have ignored, or found means fully adequate to

accommodate for. Interestingly, such accommodation to skill deficits was itself an important research finding which obviously diminishes the significance of test performance,[6] but this may be of little consolation to the individual tested who knows that he has failed.

There is no consistent position which behavioral researchers in other disciplines take on such study. At the extremes, this kind of research is either justified on grounds of results sought and the benefits gained from the knowledge which results; or at the other extreme, if any personal harm is possible, the research is condemned as not justifiable (Holden, 1979). While one can attempt to safeguard the integrity of the test situation and the publication of study results, the point is still that respondents can be adversely affected by the self- and public-disclosures of personal traits and competencies they perceive to be negative.

Conclusion

Implicit in this discussion is that field behavior studies not only raise issues of objectivity and replicability, but also of the ethical relationship between researcher and subject, such as tend not to get raised in more restricted classroom and laboratory studies. These latter involve subjects whose protection is assumed either by the ambiguity (sterility) of the tasks they are assigned, or by carefully worded assurances (via "informed consent" forms) that the tests undertaken are non-obtrusive (minimally demanding of commitment or emotion-generating), and thus not likely to harm either ego or psyche should test results be made public. In field studies, it is difficult to give such assurances when one works with small populations, and wishes to compare community members (identified by significant characteristics, if not by name), and to explain their differences. This raises the question of ethics in describing one's research concerns to prospective subjects: to

what purpose, and promising what rewards or benefits? Granted, then, that one requires judgement and sensitivity in carrying out behavioral research in the field; yet, if we are to restrict ourselves to that which doesn't impinge on someone's or some population's sensitivity, we are likely to be left with little other than behavioral history to research, and even then only by assuring survivors that nothing we make public will detract from the memory of those persons and communities we study. And even this assumes that we could so identify that which sustains and that which detracts from the memory of people and places.

We (I) seem to be in a strange position. Instead of certainty as to the goals of our (my) research, we (I) risk getting overly concerned, instead, with issues of privacy, and with the potential for harm by even the unintentional faulting of one's own promises to the welfare of respondents. Yet we can't simply say that unless we can be sure that we don't intrude into someone's privacy or otherwise cause personal harm, that we won't study that person, or won't ask those questions, or maybe, at some point, just won't do that research. It may, in fact, be as easy to overestimate the fragility of personal relationships and respondent well-being as it is to underestimate the sensitivity of respondents about such issues as privacy and the self-disclosure of embarrassing information. This leaves us still with the question as to an appropriate measure of harm, to go with that which we are usually expected to answer concerning benefit. This is not a question we have often asked.* I would only suggest that the need exists for a personal examination and at least an effort at resolution of this issue of harm by the behavioral researchers amongst us.

*However, see Mitchell and Draper, 1983, which speaks to some of the ethical issues raised in this paper, as well as some others in the context of non-behavioral research as well.

Heinz Schuler opens his book on Ethical Problems in Psychological Research (Academic Press, 1982) with a quotation from Arthur Schopenhauer. It states simply:

> Moralizing comes easily;
>
> [It is] justifying morality [that] is hard

This seems to imply -- in the context of behavioral research -- both the ambiguity of morality, and the strength of the drive to knowledge. I with I felt more comfortable with the contrast, given the concreteness -- in human terms -- of the one and the abstractness of the other. Or is there simply confusion concerning which -- morality or knowledge -- is the abstraction, and which is the concrete reality?

(1) Notes:

1. See, for example, Mark G. McGee, Human Spatial Abilities, Praeger, 1979; also Lynn S. Liben, A.H. Patterson and N. Newcombe, Spatial Representation and Behavior Across the Life Span, Academic Press, 1981.

2. "Patterns of Wayfinding" (Paper presented at the Annual Meeting of the Assn. of American Geographers, April 19-22, 1981, Los Angeles, 10 pp.)

3. "Cerebral Correlates of Environmental Skills", Man-Environment Systems, v. 8, 1978, 241-51.

4. See Note "2", above. Also, "Geographic Orientation and Way-finding Behavior: Models and Realities" (Paper presented at the Annual Meetings of the Assn. of American Geographers, April 25-28, 1982, San Antonio.)

5. See the Newsletter (International Assn. of Cross-Cultural Psychology), editorials and related materials, December 1976 (v. 10, no. 5) to December 1977 (v. 11, no. 5) in particular.

6. See Note "2", above.

(2) Bibliography:

Holden, Constance, "Ethics in Social Science Research", Science, v. 206, 1979, 537-40.

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